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Support for Complete Streets

Endorsed and promoted by a wide range of organizations:

- Professional Associations
- Advocacy groups
- Business organizations
- Governmental commissions
- Federal, state and local governments and departments
- Safe Routes to School



Michigan Law

PA 135 OF 2010
(Amended 1951 PA 51)

- Requires interjurisdictional consultation on non-motorized projects and 5-year program
- Use of established best practices
- Establish an Advisory Council to educate/advise transportation stakeholders and the public on the development, implementation and coordination of CS policies
- MDOT may provide technical assistance and will share expertise on trunk line projects
- Enables interjurisdictional agreements for maintenance

PA 134 of 2010
(Amended 2008 PA 33):

- Definition of "streets" expanded to include all legal users
- Expands elements that may be included in a master plan to include all forms of transportation
- Specifies that transportation improvements be appropriate to their context
- Specifies cooperation with road commission and MDOT

Effective Aug. 2010

What's a Complete Street?

A system of streets...
planned, designed, operated and maintained so all legal users may safely, comfortably & conveniently move along & across streets




PA 136 of 2010

All users include:

- Pedestrians
- Bicyclists
- Transit users
- Motorists
- Trucks
- Children
- Elderly
- People of various abilities



Why Now?



There has been a concerted move towards Complete Streets in the USA since the early 1990's

- Unmet needs for mobility and access of PEOPLE
- # of households w/no vehicle +40,000; # of 2 or more vehicles -150,000 households in Michigan
- 77 million Baby Boomers
78 million Millennials
- Rise in chronic diseases, obesity, health care
- Focus on sustainability and choice
- Place-making

How Did We Get Here?



1910's - 40's: Compact Development, grid pattern

Post - WWII: Suburbanization, low density, curvilinear streets, highways

60's - 90's: Declining cities, urban renewal, suburban growth, complete highways


Today: Auto-dominated development

Increased auto mobility

Design for cars, conflicts with other users


Led to pollution, oil dependence, obesity


Renewed interest in walking and biking




Street Types


- Pre WWII: tight street grid, straight connected streets, sidewalks and alleys, block size 400' or <
- Post WWII: curvilinear streets, cul-de-sacs, few sidewalks, large blocks at 600' or > and super blocks at ½ - 1 mile






Land Use Patterns






Traditional Transportation Planning

- Traditional functional classification
 - Expressways
 - Major/Minor Arterials
 - Collectors
 - Local Streets
- Focused on moving cars and trucks
- Similar to Act 51 funding maps (major & minor streets)





Transportation Systems Thinking

- Multi-modal network
- Primary network for each user (not all cyclists have same needs)
- Not every street will accommodate each user equally
- Plan a system with a good "quality of service" for all users






Illustration: L. St. Pierre, Inc.



Cultural Shift

- **ACCESS**
 - Interconnected networks (destinations linked by roads, sidewalks, trails and transit)
- **MOBILITY**
 - Full array of facilities (on-street bike lanes, sidewalks, pathways, trails, transit, etc.)
- **SAFETY**
 - Facilitate safe movement along and across streets (crosswalks, access management, traffic signals, etc.)
- **CHARACTER**
 - Match street design to user needs and context (includes everything in public right-of-way)



Vision Statement

**Adopted by the Complete Streets Advisory Council
April, 2012**


- "A transportation network that is accessible, interconnected, and multimodal and that safely and efficiently moves goods and people of all ages and abilities throughout the State of Michigan.
- A process that empowers partnerships to routinely plan, fund, design, construct, maintain and operate complete streets that respect context and community values.
- Outcomes that will improve economic prosperity, equity, accessibility, safety and environmental quality."



Consequences and Benefits




- Safety
- Public Health
- Mobility/Equity/Access/Choice
- Environment
- Economic Development



Safety Consequences

Roads are engineered for high motor vehicle volumes and speeds


- Severe crashes/fatalities
- Signals timed for cars
- Congestion
- Auto emissions
- Discourages bicycling, walking, and transit use = rise in obesity rates
- Low income populations lack access to jobs and fresh food



What do seniors fear most?

| | |
|-----------------------|-----|
| A. Death | 50% |
| B. Giving up car keys | 50% |

Source: AARP



Non-Motorized Accidents

Pedestrian and Bicycle Crashes in Michigan

- 1.4% of all crashes
- 12.5% of all fatal and incapacitating injury crashes
- 12.8% of the comprehensive cost of all crashes
- Pedestrian and bicycle crashes represent a comprehensive cost of ~ \$921,000,000 each year in the State of Michigan

Based on an analysis of 2008 – 2012 MDOT data and Cost/Benefit Analysis

Benefits: Increased Safety

- Slower traffic speeds reduce crash severity
- Pedestrian signals at proper locations can reduce pedestrian crashes
- Four to Three Lane Conversions (Road Diet)
 - 29-34% crash reduction
 - 68% injury reduction
- Multi-modal design
 - 90% decrease in pedestrian fatalities
 - 75% decrease in bike fatalities

% Pedestrian Fatalities in Crashes

| Speed Limit | % Pedestrian Fatalities in Crashes |
|-------------|------------------------------------|
| 20 MPH | 5% |
| 30 MPH | 45% |
| 40 MPH | 85% |

Source: Michigan State Police, Michigan Department of Transportation, Census Bureau, 2008

... installing pedestrian and bicycle facilities can reduce the risk of crashes by 28%.

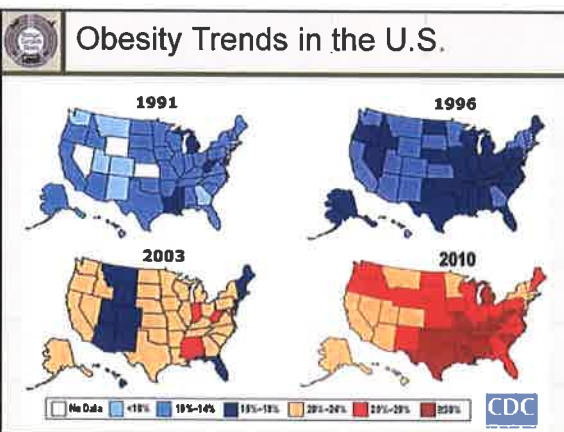
National Complete Streets

Health Consequences

Lack of physical activity costs everyone.

- 31.7% of adults and 16% of children in Michigan are obese
- 1 in 3 people will be diagnosed as diabetic
- Managing diabetes costs insurance companies approximately \$40,000 per year
- In 2008, Michigan spent \$3.1 B in obesity related medical costs
- MDCH has estimated obesity medical costs at \$12.5 B by 2018

Photo: Dan Butler



Benefits: Health Care Savings



Change in Bicycling and Walking Rates vs Adult Obesity and Overweight Rates

Trend in Obese Children vs Rate of Bicycling and Walking to School

- Active Communities
 - Reduce obesity
 - Reduce heart disease
 - Reduce diabetes
- Increase in physical activity reduces stress
- Businesses that provide walk/bike opportunities for employees during the workday report a ~30% reduction in sick-leave absenteeism, health care use, and worker's comp and disability claims
- Reduction in healthcare costs and insurance premiums


Mobility/Access/Choice Consequences

- At least 1/3 of Americans don't drive
- 55% of Americans would rather drive less and walk more
- 72% of trips are 1 mile or less, in Michigan 90.5% are by car

Who doesn't drive?

- By necessity
 - Seniors
 - Persons with disabilities
 - Children
 - Those lacking means to afford a car
 - Court-ordered
- By choice
 - Many reasons – health, environment, enjoyment and costs

Benefits: Mobility Access/Equity/Choice




- Meets the needs of various users of all ages and abilities
- Provides a choice for mobility
 - 20% of Americans have a disability that limits their daily activities
- Increases access for persons with disabilities, low-income populations, and others to quality health care, jobs and education
- Allows seniors to "age in place", which saves money and provides physical as well as mental health benefits

Environmental Consequences

- Vehicles create 30% of Michigan's ozone-forming pollutants
- Between 1960 and 2001, Michigan's CO₂ emissions from fossil fuels increased by 46%—primarily as a result of oil combustion for transportation
- 40% of trips nationwide are 3 miles or less; **72% of trips less than 1 mile are made by auto**
- In Michigan, 90.5% of trips were made by auto


| Year | Commute miles/person |
|------|----------------------|
| 1945 | 5 |
| 1965 | 13 |
| 1985 | 20 |
| 2005 | 27 |



Benefits: Cleaner Environment


- Reduce oil dependence
- May reduce greenhouse gas emissions: fewer and shorter car trips
- Reduce carbon footprint as people choose to walk or bike
 - 1 gallon of gas=19.4 lb CO₂
 - 1 VMT=1 lb CO₂
- 2006 studies show that the more walkable a community, the lower the vehicle emissions

... one pound of carbon gas is enough to fill an exercise ball ...




Economic Development Consequences

- Walkability/bikeability and transportation options are key indicators among the creative class when choosing where to live
- Senior citizens and retirees, another demographic that communities hope to retain, also value transportation choice
- Michigan must be able to retain and attract young professionals and international talent to be competitive in the global marketplace



Forbes 1/24/14



Millennials in 2014: Take My Car, Not My Phone

"In fact, more than 40 percent of people 35 and up believe losing their cars would be the hardest aspect of their lives to give up. Only one-quarter of the millennials surveyed agreed that a car comes first."


Benefits: Economic Development



"Houses with above-average levels of walkability command a premium of about \$4,000 to \$34,000 over houses with just average levels of walkability."
CEOs for Cities, 2009

- Provides access to opportunity for all populations (jobs, education, health care, personal services, places of worship, healthy food)
- Attraction and retention strategy for talent and businesses in a competitive marketplace
- Transportation is ~1/5 of a household's income; lower costs means more for consumer spending
- Reduced transportation costs increases ability to support housing choice

Benefits: Economic Development



"The Division Avenue road diet allowed me to attract high-quality tenants and transform this block."
Bob Dykstra, Harris Building owner in Grand Rapids

- Catalyst for new and re-development
- Placemaking creates new investment
- Defines character of an area
- Every 1 point improvement in walkscore equates to \$500 to \$3,000 increase in housing value
- Every 400 feet closer to bicycle facility equates to \$510 additional home value




Benefits: Economic Development



East Hills construction value, 2009-2013:

| | |
|------|-------------|
| 2009 | \$1,780,000 |
| 2010 | \$1,640,000 |
| 2011 | \$1,410,000 |
| 2012 | \$2,220,000 |
| 2013 | \$6,490,000 |



An Expanded View of Streets




Illustration: LSL Planning Inc.




An Expanded View of Streets

- A community's streets are a defining characteristic of place, and may include many elements:
 - The roadway or street itself
 - Landscaping/LID
 - Sidewalks and bike lanes
 - Relationship of buildings and sites to the street




Streets constitute a community's single most important public space in terms of size, visibility and use




Context


Street Design varies based on character of area



Urban





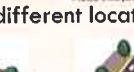
Suburban



Rural

Source: www.parkstreets.org/Landscapes

Different treatments at different locations

Illustrations: L&L Planning, Inc.

Bike Facility Example

- Facilities are designed to accommodate various users

| Bicycle Type | Percentage |
|------------------------|------------|
| Strong & Fearless | 60% |
| Enthusiast & Confident | 27% |
| Worried but Concerned | 13% |

Paved Shoulders

Roadside Pathways

Bike Lanes & Sidewalks

Shared Roadways

Rural Applications

Urban Applications


Multi-Modal Quality of Service

Priorities are not the same on every street


| Automobile Level of Service | Transit Quality of Service | Bicycle Quality of Service | Pedestrian Quality of Service |
|--|---|--|--|
|  |  |  |  |
| • The degree of intersection | • Non-urgent service, stops, and arrivals • Fewer riders who choose transit over other modes | • Complete system for all types of riding • Reasonable condition, few stops, and conflicts with other modes | • Complete system • Reason for transit • Unimpeded Comfort |
|  C/D |  C/D |  C/D |  C/D |
| • Delays exist up among stops, and light | • Delays between stops | • Conflicts of vehicle activities are able to blend comfortably in key environments | • An adequately complete network of access facilities |
|  |  |  |  |
| • Congest delays at intersection | • Limited or no service • Fewer stops and arrivals | • Allow gaps in system • Allow stops and arrivals conflict their payment | • Gaps in system • Poor pavement • Cross walking |

Level of S, Planning Inc.

Balance and prioritize design to meet street's purpose



Beyond The Physical Roadway




- Complete Streets go beyond physical design and infrastructure
- It is about creating culture and policies that provide safe and efficient transportation choices
- Like any cultural shift, this will not happen overnight

Complete Streets is a cultural change and a shift in our understanding of the value of streets beyond moving vehicles to ensure mobility, access, and choice for all.



Resource Clearinghouses

- Michigan Department of Community Health:**
mihealthtools.org/mihc/CompleteStreets.asp
- Michigan Complete Streets Coalition:**
michigancompletestreets.org
- MDOT Complete Streets Advisory Council:**
<http://tinyurl.com/3glwcnv> or
http://www.michigan.gov/mdot/0,1607,7-151-9623_31969_57564--,00.html
- N-Plan:** www.nplanonline.org
- National Complete Streets Coalition:**
www.completestreets.org



Questions?

